

## **REMARKS/ARGUMENT**

Applicant responds herein to the Office Action dated September 27, 2005.

### **Regarding the Claims in General:**

Claims 1-5, 7, 8, and 82-87 are now pending. Claims 1-3 have been amended to better highlight the distinguishing features of the invention, to address the rejection under 35 U.S.C. 112, and to otherwise improve the form thereof, and claims 4 and 5 have been amended to make minor formal improvements, and to conform the wording of these claims to the changes in claims 1-3.

New claims 82-87 have been added to provide applicants with additional protection to which they appear to be entitled in light of the known prior art.

### **Regarding The Allowable Subject Matter**

Applicants note with appreciation the indication that, subject to the rejection under 35 U.S.C. 112, claims 4, 5, 7, and 8 would be allowed if rewritten in independent form incorporating the limitations of their respective parent claims. Because these claims are all directly or indirectly dependent on claim 1, which is believed to be allowable as amended, claims 4, 5, 7, and 8 have been retained in dependent form pending the Examiner's further consideration.

### **Regarding the Rejection under 35 U.S.C. 112:**

Claims 2 and 3 have been amended to address this rejection.

### **Regarding the Prior Art Rejections:**

In the outstanding Office Action, claim 1 was as being anticipated by Mandella et al. U.S. Patent 6,201,608 (Mandella), and claims 2 and 3 were rejected as obvious over Mandella in view of Tearney et al. U. S. Patent 6,111,645 (Tearney). Applicants respectfully request reconsideration and withdrawal of these rejections relative to claims 1-3 as currently amended.

In its current form, claim 1 is directed to an optical imaging device including a low coherence light source for irradiating an object, and for producing a reference light beam so that tomographic images of the object can be constructed based on interference between returning light reflected or scattered from the object and the reference light beam. The claim recites several light branching units, couplers and other elements, along with signal processors etc.

directed to this function. In particular, the claim calls for “an image production unit for processing [an] interfering signal . . . to produce a tomographic image of said object.”

This, alone, distinguishes claim 1 from Mandella, which is directed to optical coherence domain reflectometry, a general imaging concept from which optical coherence tomography has developed. Mandella lacks any disclosure, teaching or suggestion of a low coherence light source, or of an image production unit for processing [an] interfering signal . . . to produce a tomographic image.

Moreover, claim 1 calls for an optical length variation unit to vary at least one of a phase delay and a group delay of either the returning light or the reference light beam, and consequently, to vary the point at which interference between the returning light or the reference light beam can occur. As stated in the claim, the optical path length variation unit includes:

- a movable light-transmissive optical element interposed between the incident light path and emitted light path, and

- a drive mechanism operative to impart cyclic motion to the light-transmissive optical element so that a point at which light in the second and third light paths interfere is scanned in the optical-axis direction as the light-transmissive optical element moves...

Mandella does disclose phase modulation, e.g., at col. 6, lines 30-41, but neither here, nor anywhere else does it disclose, teach or suggest a structure having the recited features. Claim 1 is accordingly not anticipated by this reference.

Nor are claims 2 and 3 obvious over Mandella in combination with Tearney, or any other known prior art. Tearney, for example, does not disclose, teach or suggest the claimed optical path length variation unit. Instead, all of Tearney’s phase modulation constructions rely on reflective elements, not on cyclic motion of light as it passes through a moving light transmitting element.

In any event, claim 2 and 3 recite further details of the optical path length variation unit which are not disclosed, taught or suggested in Mandella, alone, or in combination with Tearney, or in any other known prior art, considered singly or together.

New claims 82-88 are patterned after claims 1-5, 7, and 8 respectively. While new independent claim 82 recites various features common to optical coherence tomography

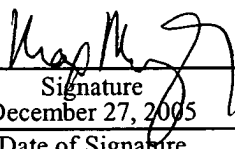
apparatus in more general terms than claim 1, the distinguishing features of this claim, and of dependent claims 83-88 related to the construction of the optical length variation unit, are the same as described above. These claims are therefore allowable over Mandella, Tearney, and other known prior art for the reasons stated.

Accordingly, the Examiner is respectfully requested to reconsider the application, allow the claims as amended and pass this case to issue.

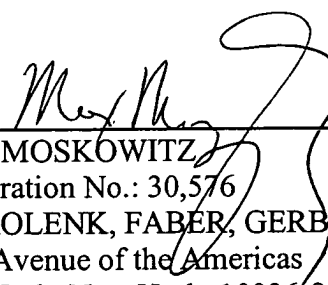
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on December 27, 2005

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